IN THE CLAIMS

Please cancel claims 19-26, 35-42, and 45 without prejudice.

Please add claims 46-50.

Please amend claims 27 and 32 as follows:

CLAIMS:

1-18. (Canceled)

19-26. (Cancelled)

27. (Currently Amended) A matrix package comprising:

a ~~module~~ heat spreading ~~means~~module comprising:

a plurality of sawing guide grooves on ~~it~~an upper surface; and

a plurality of grooves and protrusions ~~in its~~on a bottom surface~~.~~; and

a thermally conductive adhesive ~~means~~applied to an inside surface of the grooves and a non-conductive adhesive ~~means~~applied to a surface of the protrusions of the ~~module~~ heat spreading ~~means~~module; and

a substrate comprising a matrix of package sites arranged in an array each including a chip and a package substrate,

wherein the ~~module~~ heat spreading ~~means~~module is positioned on the substrate so that the surfaces of the protrusions are in contact with the package substrates of the ~~substrate~~package sites and the inside surfaces of the grooves are connected to ~~the~~an upper passive surface of the chips.

28. (Previously Presented) The matrix package of claim 27, wherein the plurality of protrusions are positioned approximately centrally between rows of chips.

29. (Previously Presented) The matrix package of claim 27, wherein the plurality of grooves

are positioned approximately parallel to each other.

30. (Previously Presented) The matrix package of claim 27, wherein the plurality of sawing grooves are arranged in a square grid array.

31. (Previously Presented) The matrix package of claim 27, wherein the package sites are arranged in a square grid array.

32. (Currently Amended) The matrix package of claim 30, wherein the sawing guide grooves are arranged in a square grid array which has approximately the same dimensions and orientation as the square grid array of the package sites.

33. (Cancelled)

34. (Previously Presented) The matrix package of claim 27, wherein the chips are mounted on the package sites using a flip-chip technique.

35-42. (Cancelled)

43. (Withdrawn) A method to assemble a semiconductor package comprising:

providing a module heat spreading means comprising:

a plurality of sawing grooves on its upper surface; and

a plurality of grooves and protrusions in its bottom surface;

attaching thermally conductive adhesive means to the grooves and non-conductive adhesive means to the protrusions of the module heat spreading means;

providing a substrate comprising a matrix of package sites arranged in an array each including a chip and a package substrate;

positioning the module heat spreading means on the substrate so that the protrusions are

in contact with the package substrates of the substrate and the groove is connected to the upper passive surface of the chip;

curing the adhesive means;

attaching a plurality of external contact means to the contact areas on the bottom surface of the package substrates of the substrate; and

singulating the individual semiconductor packages by using the sawing grooves in the upper surface of the module heat spreading means to guide the path of the saw blade.

44. (Withdrawn) The method of claim 43, wherein the plurality of chips are mounted using the flip-chip technique to a redistribution board at each package site.

45. (Cancelled)

46. (New) A semiconductor assembly comprising:

a substrate having a matrix grid array of package sites defined along lateral grid array lines and longitudinal grid array lines, each package site having a semiconductor chip substantially centered within the package site and mounted in a flip-chip fahsion to the substrate; and

a heat spreader module including:

a planar plate having upper and lower surfaces and lateral and longitudinal dimensions substantially equal to the substrate; and

a plurality of bar-like protrusions extending from the lower surface of the planar plate and extending across the longitudinal dimension of the planar plate, the bar-like protrusions being in parallel with one another and forming channel therebetween, the channels having a surface formed by the lower surface of the planar plate; and

a grid-work of lateral and longitudinal sawing guide grooves extending across the upper surface of the planar plate, the longitudinal sawing guide grooves centrally aligned with the bar-like protrusions, wherein bar-like protrusions are bonded to the substrate

along the longitudinal grid array lines with a thermally conductive adhesive and the surfaces of the channels are bonded to upper surfaces of the semiconductor chips with a electrically non-conductive adhesive.

47. The semiconductor assembly of claim 46, wherein the lateral sawing guide grooves align with the lateral grid array lines.

48. The semiconductor assembly of claim 46, wherein the lateral sawing guide grooves are V-shaped.

49. (New) A heat spreader module comprising:

a plurality of bar-like protrusions extending from and running in parallel with one another across a longitudinal dimension of a planar lower surface and forming a plurality of channels therebetween, the channels having a surface formed by the lower planar surface; and

a grid of saw guide grooves extending across lateral and longitudinal dimension of a planar upper surface, wherein the heat spreader module is configured to be adhesively bonded to a substrate having an array of package sites having boundaries defined by lateral and longitudinal grid lines, each package site having a semiconductor chip substantially centered within the package site, wherein the bar-like protrusions are spaced so as to be bonded to the substrate along the longitudinal grid lines and the surfaces of the channels are configured to be bonded to an upper surface of the semiconductor chips, and the lateral and longitudinal saw guide grooves are spaced so as to align with the lateral and longitudinal grid lines.

50. (New) The heat spreader module of claim 49, wherein a surface of the bar-;like protrusions to be bonded to the substrate are coated with a thermally conductive adhesive and the surfaces of the channels are bonded to upper surfaces of the semiconductor chips with a electrically non-conductive adhesive.